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Chapter

Generating Internal Motivation through Mobile Application Technology

K. Thomas Baby

Abstract

This paper is a practical account of the author's experimental analysis of using mobile application technology in the undergraduate ELT classes of Dhofar University, Salalah, Oman. In today's world, technology plays an indispensable role in human life. Integrating latest technological applications in the classrooms can be a challenging task for many teachers, but it is undoubtedly a powerful tool for enhancing the quality of education. This paper outlines how to generate internal motivation and enhance the cognitive skills of students through the innovative use of mobile/smart phones in the classroom. Nowadays, innovative use of mobile applications in the classroom is advocated by numerous educational experts. This shift in perspective is necessitated by the large-scale digitalization of education and educational resources. Consequently, this study explores how mobile devices can be used effectively for enhancing involvement and motivation of students in various learning activities to promote learner autonomy and peer learning opportunities within the classroom. This experiment eventually resulted in a visible rise in the motivational graph of the whole class as testified by students' performance in their tests. Finally, this paper also outlines how mobile learning can be integrated into a conventional university curriculum.

Keywords: ELT classrooms, motivation, teachers, learners, mobile applications

1. Introduction

Motivation is generally considered to be the primary moving force behind the success of any learning activity. It drives the learner to focus on his intended goal with single-minded devotion to achieve success in all his endeavors. Therefore, generating internal motivation in a learner is the primary task of a good teacher. Integrating mobile applications in the classrooms can enhance the motivation level of students because mobile devices have become an essential part of their everyday life. Consequently, an innovative teacher should think of integrating mobile applications in his curriculum resulting from a critical evaluation of his own current teaching practice. According to Ciampa [1], it is very important to understand critically the scope of technology-supported learning activities on aspects of motivation before implementing any learning programs.

The digitalization of education and educational resources is a direct outcome of the rapid technological development of our times. Therefore, mobile devices can be used effectively in the classroom not only to promote electronic skills but also

to improve engagement and motivation in their learning activities. The choice of mobile/smart phones for enhancing the learning outcome in the classroom resulted from a subjective personal experience of this author. The subjective experience was from an undergraduate ELT class at Dhofar University in Oman. In grammar classes, this author's usual practice was to explain the rules of a given concept followed by the distribution of worksheets to test students' understanding of specific grammatical concepts. The explanation of concepts lasting up to a maximum of 15 min is usually done at the beginning of the class. During this time, it was noticed that many students were secretly engaged with their mobile phones under the pretext of listening to the teacher.

The above-mentioned episode of student's excessive involvement with their mobile devices is a clear instance of the lack of motivation for traditional learning activities on the part of the students. On deep reflection, the author realized that it was the mobile phone and its different applications that attracted and engaged students more than the verbal explanations from the teacher. Therefore, it was decided that the initial part of learning the grammatical concept will be done independently by the students through their mobile phones. The teacher would only be a facilitator in this task by moving around the groups to make sure that students are using their mobiles phones only for the task of learning the concept. If they fail to find out all aspects of the concept, it would be supplemented by the teacher during the last 5 min of the session. This strategy proved to be very successful as claimed by West [2]. He contended that student engagement and mastery of important concepts can be easily achieved if learning with mobile devices is carefully designed to create more collaborative and participatory learning experiences.

This innovative experiment was implemented in three different undergraduate classes simultaneously as it did not affect the traditional teaching and assessment system of the university. Eventually, it resulted in a visible rise in the motivational graph of the whole class as testified by students' performance in the subsequent grammar tests. The positive outcome of this experiment is corroborated by various studies on employing mobile phones as an effective tool for education. According to Looi et al. [3], the highly personalized nature of mobile phone provides an excellent platform for promoting learner autonomy and peer learning opportunities marked by flexibility, collaboration and active participation. This initial experiment in the class resulted in an increased student involvement in the learning process leading to better interaction between individual students. This paper is also a practical account of how mobile applications can be integrated into classroom teaching without affecting the traditional syllabus and schedule of a conventional university curriculum. More specifically, it is an account of how the innovative use of mobile application technology in the regulated environment of a traditional ELT classroom can generate internal motivation in students.

2. Literature review

Numerous studies have been conducted on the effectiveness of mobile learning. Evidence on academic achievement is provided by researches from different parts of the world showing the effectiveness of mobile/smart phones as an educational tool. For example, some researchers like [4–7] focused their attention on the improvement in learning outcome. On the other hand, many others such as [5, 8–11] provided differing information on the impact of mobile learning and its role in enhancing the motivation of students in their learning activities. However, many teachers and students agree that mobile devices can be considered to be a motivating factor for teaching and learning.

A number of case studies have been conducted in the area of mobile learning and motivation by different researchers. The findings of a case study by Ciampa [1] based on Malone and Lepper's taxonomy of intrinsic motivation have proved that learner motivation can be enhanced considerably through the application of mobile learning technology in classrooms. Ciampa [1] has undertaken this case study of sixth grade students who employed only digital devices for all their learning activities in the class to decipher the variation of motivation level and learning outcome achieved in mobile learning. In addition to its theoretical foundations, the study also explored the important practical aspects of motivation in technology-supported learning environments. Another study by Miller and Cuevas [12] also claims that the use of mobile devices is more effective than using paper-based approach in classroom learning and academic motivation. Their findings encourage the use of mobile devices due to their effect on motivation, which may offer an interactive classroom environment where students feel enthusiastic and eager to learn.

Many researchers have shown that teachers perceive enhanced motivation level in students when mobile learning technology is incorporated into their instructional strategies. For example, Navaridas et al. [11] recommended application of mobile learning activity in classrooms to enhance student motivation and achievement. Similarly Sung and Mayer [13] found that participants using mobile devices were more satisfied by their learning activities. Their enhanced performance indicators and motivational factors were also taken into account for recommending mobile application technology in classrooms.

2.1 Research methodology

Partial mobile learning was implemented in two undergraduate classes consisting of 29 and 32 students each. In the grammar classes, the usual practice was to explain initially the rules of the grammatical concept which would be followed by the supply of worksheets to test the students' understanding of the concept. The explanation of concepts lasting up to a maximum of 15 minutes is usually done at the beginning of the class. During this time, it was noticed that many students in Class A (29 students) were secretly engaged with their mobile phones under the pretext of listening to the teacher. More than 75% of them are boys in this class. In Class B (32 students), boys were only around 20%. In this female-dominated class, students were more motivated to learn as evident from the scores they achieved in the previous test before switching over to partial mobile learning. In both classes 15 minutes of initial explanation was shifted to mobile mode of learning. The students were allowed 10 minutes to learn the grammar topic independently through the free use of their mobile phones. The teacher would act only as a facilitator in this task by moving around the groups to make sure that students are using their mobiles phones only for the task of learning the concept. If they fail to find out all aspects of the concept, it would be supplemented by the teacher during the last 5 min of the session for the whole class after eliciting answers from the students. The socio-economic and cultural aspects of the learners are not taken into consideration in this study.

2.1.1 Results and discussion

In this mode of mobile learning around 15 min, it was noticed that student engagement and participation in the group activities were at a higher level leading to improved motivation especially in the male-dominated class as reflected in their higher test scores. Furthermore, in this class there was a considerable difference between tests 1 and 2. This result revealed that mobile learning technology

is effective in enhancing the motivation level of low achievers. In class 2 where female students constituted around 80%, the difference between tests 1 and 2 was negligible. This result shows that if motivation level is high among students, the mobile learning application is not of much consequence. However, mobile learning application is very effective among low achievers for enhancing internal motivation as it promotes learner autonomy through peer learning opportunities.

This simple observational experiment is highly useful for a class of low achievers with poor motivational level. Since this study doesn't use any scientific parameters to measure the motivation level of students, it is only an experimental or observational analysis based on the personal experience of the author vindicated by test scores achieved by the students. To verify the result of this finding, a more scientific approach to the study is necessary. However, a number of studies in mobile learning application support the findings of this study. Since the focus of this study is on generating internal motivation, this paper dwells at length on the importance of motivation and its different aspects.

2.2 Generating internal motivation

Motivation is an indispensable part of any learning activity. It has an important role in modifying the behavior patterns of the learner, and it is the key to achieving success in second language acquisition. Generating internal motivation in the learner can be accomplished through different strategies supported by innovative educational technology. A mobile device has an ingenious technology that can perform multiple functions essential for our everyday life. Therefore, nowadays, innovative use of mobile applications in the classroom is gaining popularity as advocated by numerous educational experts. For example, Shuler [14] claims that cognitive process involved in mobile learning has witnessed unprecedented growth over the past decade. The universal availability of mobile phones and their easy adaptability for educational purposes have brought in revolutionary changes in the education sector. Presently, mobile learning technology has been employed effectively for generating internal motivation to achieve success in life.

According to Vanpatten and Benati [15], motivation may vary based on individual differences; however, the effect of motivation can be measured by the degree of 'wanting to learn' and consequently, the degree of the 'realization of that desire'. Motivation is basically an inner urge caused by certain external conditions or specific events happening in one's own life or the world around. Primarily, it is an innate desire to achieve certain specific goals through one's own effort. However, when there is motivation, the process or the effort expended for achieving the goal becomes in itself an object of happiness and satisfaction. Therefore, motivation has been regarded as an important element that brings success in a person's life. It is instrumental in providing a person with unfailing energy to move forward to achieve his/her goals. Therefore, generating internal motivation in learners can be considered to be the most important function of a teacher.

2.2.1 Different types of motivation

Motivation can be defined as internal and external factors that stimulate desire and energy in people to be continually interested and committed to a job, role or subject or to make an effort to attain a goal (businessdictionary.com). In other words, motivation results from the intensity of desire, the value of the reward and the expectations of happiness that the individual can get ultimately on achieving his goal. It is an internal state or condition that activates the mind in a specific direction. In other words, it is an ardent desire that energizes and directs goal-oriented

behavior. Furthermore, the persistence of behavior is an essential component in achieving the desired goal. According to Huitt [16], motivation is involved in the performance of all learned behavior, and a learned behavior will not occur unless it is energized. Moreover, he believes that there are primary and secondary motivations based on individual differences influenced by perception, memory, cognitive development, emotion and personality.

Ellis [17] described two main types of motivation as internal and external motivation. According to him people are motivated by both external factors such as rewards, grades or the opinions of others and by internal ones such as personal interests, curiosity or experiencing an activity as personally satisfying or rewarding. When motivation is caused by internal factors, it is called intrinsic motivation. It is the type of motivation which appears from the inside of the individual because it is naturally satisfied with what one is doing. On the other hand, extrinsic motivation drives someone to an external reward such as money or grades. Extrinsic motivation appears from the outside, whereas intrinsic motivation arises from the inside of a person. Some classifications further talk about instrumental and integrative motivation. For example, students with instrumental motivation will study a subject for practical reasons, but students with integrative motivation will study a subject only to understand and know more about it in order to expand the horizons of their knowledge.

2.2.2 Intrinsic and extrinsic motivation

Intrinsic motivation for learning is generated mainly by three factors called the triple 'C' known as challenge, curiosity and control. When the learning process is neither too easy nor too difficult, it can offer challenge for the learner. The immediate feedback in mobile learning applications satisfies the challenge instantly leading to enhanced motivation of learners. This can result in seeking further challenges to prove their skill or ability with renewed vigor. Curiosity is the most direct intrinsic motivation for learning. It can be categorized into sensory curiosity and cognitive curiosity. According to Liu et al. [18], the interactive multimedia capabilities of mobile devices can easily stimulate an individual's sensory and cognitive curiosity. Finally, the freedom of choice over one's learning can offer an illusion of control. According to Malone and Lepper [19], it can significantly improve motivation level and academic performance by providing a sense of personal control over meaningful outcomes.

Extrinsic motivation for learning constituted of cooperation, competition and recognition. Cooperation can be defined as a group of individuals working together to attain a common goal. According to Johnson and Johnson [20], cooperation promotes effort exerted for the achievement of a common goal resulting in greater productivity. It will enhance motivation leading to higher quality of relationships among participants. Competition can enhance motivation because it involves competition against a standard of excellence and not in terms of two or more people working against each other with differing or opposing goals. Recognition means learners want their accomplishments being recognized and appreciated by others. The motivation level of learners will be enhanced when their achievements become visible to other people.

2.2.3 Mobile application technology and motivation

The idea of establishing digital classrooms was originally intended to promote and develop the electronic skills of the students and to prepare them for the practical world outside school. However, it served the higher purpose of generating

motivation in new-generation learners because of their attraction to digital devices. According to Ferguson [21], digital devices are instrumental in improving students' engagement and motivation in their learning activities. Watfa and Audi [22] believe that digital devices will be an added impetus for active participation from all students during class hours. Consequently, it will maximize the learning outcome by the immediate real-time feedback offered for improving the performance of students.

Digital classrooms are essentially learner-centered because peer intervention is a salient feature of this learning activity. In addition to this, digital classrooms provide learners with various methods of accessing and structuring their knowledge through active interaction with other learners. Hence Grigoryan and Babayan [23] opined in a digital classroom the teacher is empowered and conditioned by the learners to enhance his competence to provide appropriate technological instruction to the students. As a result, mobile application technology in classroom offers a new paradigm of learning and not just a new tool or a method of teaching and learning [24]. An observational analysis of students' behavior patterns revealed that many undergraduate students enjoy using their smart phones most of the time. They are seen engaged with these devices secretly even during the lecture time.

2.3 An innovative experiment

The partial use of mobile application technology in the ELT classroom of Dhofar University was necessitated by the lack of student motivation noticed in an undergraduate class. The choice of mobile/smart phones for enhancing motivation in the ELT undergraduate class is based on a very personal experience of this author. In the grammar classes, the usual practice was to explain initially the rules of the grammatical concept. Consequently, it would be followed by supplying of worksheets to test the students' understanding of the concept. The explanation of concepts lasting up to a maximum of 15 min is usually done at the beginning of the class. During this time, it was noticed that many students were secretly engaged with their mobile phones under the pretext of listening to the teacher.

The above-mentioned episode is a clear instance of lack of motivation on the part of the students. On deep reflection, the author realized that it was the mobile phone and its different applications that attracted and engaged students more than the verbal explanations from the teacher. Therefore, it was decided that the initial part of teaching the grammatical concept would be substituted with learner autonomy. The students were allowed 10 min to learn the grammar topic independently through the free use of their mobile phones. The teacher would act only as a facilitator in this task by moving around the groups to make sure that students are using their mobiles phones only for the task of learning the concept. If they fail to find out all aspects of the concept, it would be supplemented by the teacher during the last 5 minutes of the session.

This experiment proved to be very effective in an undergraduate class consisting of 29 students. The specific task given in the class was about present perfect tense. Fifteen minutes each from two sessions were utilized for this experiment. Instead of explanations from the teacher, the rules of constructing present perfect sentences were elicited from the students who utilized their mobile phones for this learning activity. This simple but innovative learning activity supported by technology enhanced the motivation level of the students as reflected in their score of the subsequent grammar test. During this independent learning session, the engagement and participation of the students also testified their enhanced motivation. In terms of learning outcome, this experiment can be recommended because students scored higher mark in this test than their previous test taught in the traditional method.

The above episode is mentioned elaborately to vindicate that mobile application technology can enhance student motivation as new generation learners are naturally inclined toward the idea of using mobile/smart phone whenever possible. The higher score obtained in a rather difficult topic (present perfect tense) learned through the digital mode is a further indication that learners prefer mobile application technology rather than traditional mode of classroom lectures. Although many learners are ignorant of the theoretical implications of digital classrooms, most of them endorse the innovative use of the digital devices in classrooms. In short, the use of mobile devices in teaching learning activity will enhance the motivational level of students as shown in this experimental research.

2.3.1 Analysis of internal motivation

Most of the studies testify that mobile learning has a positive impact on their motivation. Many researchers find potential correlation between mobile devices and student motivation. The traditional mode of textbook learning is widely substituted by mobile learning nowadays because of its role in generating motivation in students. In a significant comparative study on the effect of mobile learning and textbook learning, researchers observed higher engagement, enthusiasm and motivation among mobile users than students who depended on textbook learning [5]. In addition, electronic learning with competitive elements led to an increase of motivation to outperform peers. According to Worm and Buch [25], competition incorporated into mobile learning may further increase motivation and engagement. Other research examined mobile learning's effects on intrinsic motivation. For example, [1] found that students achieve higher score when mobile learning application is incorporated into teaching learning activity.

3. Conclusion

In short, this simple observational study shows that mobile learning application technology can transform low achievers by enhancing their internal motivation. Since this study does not employ any scientific parameters to measure the motivation level of students, it is only an experimental or observational analysis based on the personal experience of the author vindicated by test scores achieved by the students. To verify the result of this finding, a more scientific approach to the study is necessary. However, a number of studies in mobile learning application support the findings of this study. Since the focus of this study is on generating internal motivation, this paper dwells at length on the importance of motivation and its different aspects.

The technological development of today brought about the widespread use of digital devices in classrooms. Moreover, the new-generation learners enjoy exploring various applications of technology not only in their day-to-day activities of life but also employing technology for their educational advancement. Doherty [26] shows the relevance and practical implications of digital classroom in contemporary life by declaring that digital classroom is a place where twenty-first century technology tools enhance communication and enable students to stay organized in their learning activities through collaborative and creative classroom experiences. He considers the classroom to be a training ground for the effective use of technology that will prepare them for twenty-first century life. In the words of Ferguson [21], digital classrooms coupled with the innovative use of technology will enhance the engagement and motivation of students in their learning activities.

Although a number of studies have found that no significant improvement in academic grades among students who employed mobile phones for their learning activities, almost all the studies have recommended the use of mobile devices in the classroom for the purpose of enhancing the motivation and engagement of students in their learning activities. Therefore, innovative use of mobile devices should be encouraged in the classroom for empowering students through regulated task-based instruction for optimum output. The application of mobile phone for learning activities in the class is significant in many ways because it is an effective method for motivating even disinterested students in their class. In short, controlled and regulated intervention of mobile devices for learning activities in the classroom can empower students and promote learner autonomy through such interactive and participatory learning experience.

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